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Evening Meeting.

Monday, Feburary 3, 1879.

LIEUT.-GENERAL SIR DANIEL LYSONS, K.C.B., Quartermaster-General, in the Chair.

PERSONAL EQUIPMENT OF OFFICERS ON ACTIVE SERVICE.

By Major T. FRASER, R.E.

If the destruction of others be the most important branch of the art of war, that of keeping oneself alive is not the least so. This is now more than ever the case, because several things combine to facilitate mobility and increase its importance. Steam and the telegraph are the chief material causes; while, among the great military nations, universal conscription has increased the size of armies, and coupled with the more uniformly scientific study of war, has rendered the launching of armed masses more rapid. The supply of the wants of individuals has therefore become, in some respects, more difficult, and rapidity therein more important.

At the same time, the more complex condition of the modern fight have given an increased value to the leadership of Officers. Everything, therefore, that increases their efficiency, and frees them, on service, from thinking about their personal wants, must promote the working of the machine.

With this object, the following notes on equipment, based on experience lately gained in European and Asiatic Turkey during summer and winter, were printed, in the first instance, in view of what seemed a probable contingency, and have since been revised in accordance with the wish of the Council of this Institution.[1]

To the notes has been added a list of what has been found useful; and to save inquiries, and also the time of those who may have to get their kit in haste, other particulars have been given where it appeared desirable.

[1] In reprinting these notes considerable additions have been made; and the author has to acknowledge the help he has received from Col. W. O. Lennox, V.C., C.B., R.E., and from Mr. F. M. Sandwith, who was on the Medical Staff of the Stafford House Committee.

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The first impression that the list of equipment is likely to produce is, probably, that it contains more than can be required. The answer is, that it has been framed to meet a number of requirements: is chiefly suggestive and must be modified according to circumstances. Travellers or Officers working independently of a field force must have some special object in view and have certain difficulties to deal with. In their case, therefore, the carrying arrangements must be made to fit their requirements within reasonable limits; and notably in the matter of food, they may even have to exceed the total amount given in the list; while with a well-found force, a much less quantity would be enough for the Officers who accompany it. Similarly, when a limit of weight is strictly adhered to, as it ought to be, Officers must use their own judgment in selecting what it is best to take. In Egypt, for instance, where it does not rain for more than three or four days in the year, waterproofs are not wanted, nor warm clothing. Again, there are many things that always accompany troops; this relieves the Officer of the necessity of taking them. Indeed, circumstances must in all cases be considered; and it has been happily suggested, I understand, by Major-General Sir Henry Green, that a conference of Officers, who, among them, have had experience in all the countries in which we are liable to campaign, should agree upon and draw up the several lists required in each case.

By the regulations of our Service, based on the carrying power of wheeled transport, Officers are, according to rank, to have from 40 to 80 lbs. of light baggage taken along with them, and in addition about 20 lbs. of cooking utensils for messes of three Officers. They each will further be allowed a bullock trunk to hold about 100 lbs. of personal baggage, which, however, is generally to remain at the base.

In countries civilized enough to have numerous good roads, railways now commonly exist, and the movement of heavy baggage is generally easy from the base to the neighbourhood of the force; but even although the ways admit of wheeled transport, the crowded condition of all the lines of advance often renders it impossible for baggage waggons to keep up continuously with troops, particularly when any emergency makes their movements very rapid; so that even with good roads, and still more so in roadless countries, some modifications will, it is thought, be necessary. Illness and inefficiency in campaigning are not so much due to permanent lack of necessaries, as to the few odd days of extreme hardship and exposure which the absence of all baggage involves. It seems, therefore, best to decide as to what is the absolute minimum for daily use and to take steps never to be without it: benefiting of course by such favourable opportunities as occur, to secure extra comforts.

Bearing this in mind, the things in the list have been put down in the supposed order of importance, and have been classified as:

(A) Those that Officers and others should try to take with them from day to day, and never part with if possible.

(B) Those that, if circumstances permit, they would try to have carried forward, so as to be available whenever the troops make anything of a halt, and the baggage trains close up.

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(C) Those that would be left at the base and would serve as a depôt to draw upon as opportunity occurred.
(?) Those required exceptionally and which may be dispensed with most readily.

The list was framed, in the first instance, chiefly to meet the requirements of a mounted Officer when detached. For regimental Officers certain reductions will be suggested.

When troops are continuously in movement, Officers will, it is thought, find that, in the countries such as those in which these notes were taken, the equipment marked A will be about all they can take along with them; and they may think themselves lucky if they can pretty often get at that marked B, to replenish list A.

Remarks on the Materials of a Kit.

Luggage.

All luggage should be marked conspicuously with the owner's rank, name, regiment, and division. The locks should be good, and there should be duplicate keys. Interchangeable keys are convenient.

In civilized countries, where wheeled transport can move with ease, any handy case answers the purpose, and weight is of less extreme importance. But with troops in the field, in countries where roads are few, and the carrying power of those that exist is constantly overtaxed, it is generally necessary that every-day baggage should be carried on pack animals, if you are ever to have it when wanted. With pack animals a small limit of size in the packages is necessary, particularly in difficult country.

Where a little extra weight can be afforded, perhaps the best kind of bullock-trunks are the regulation wicker-basket cases, covered with waterproof mail cloth. Each of these cases should have a wicker-tray, such as women have in their boxes, to save having to empty everything on the mud, should what you want be at or near the bottom. The case-straps have eyes to hook to the pack-saddle, so the cases are easily taken off *during halts*.

White's waterproof lock-up bags are the lightest things that are serviceable, which they certainly are, when a small limit of weight is allowed they are, perhaps, best. They should be furnished with pack-saddle straps, as ropes cut them and injure the contents. They are intended to hold a camp-bedstead: but when this is carried on the march, it is better to have it in a separate waterproof cover to save the trouble of emptying the bag each night in order to get out the bedstead; besides which, mud sticks to the bedstead, and thus goes into the bag, which is inconvenient. This arrangement is a necessity with the bullock-trunks, which are too short for the bedstead. The bottoms of packages should be thoroughly waterproofed, to keep out water in fording rivers; the bed-bags hardly do so.

A soldier's waterproof kit-bag is a useful addition to one's baggage, as, if necessary, it holds enough for a few days at a time.

In moving to the base of operations, mounted Officers may require a saddle-box. This should be light and not very large, and should have

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a good lock. It can be left at the base as a store-box. If lined with tin it is all the more efficient for the latter purpose.

A tin uniform case is also a suitable thing to leave at the base, to hold reserves of equipment. Officers who can only carry forward one bag or case might leave a tin case at the base instead of a bullock-trunk.

Horse Appointments.

In most countries horses are small compared with ours, so that for country horses, girths should be shortened three or four inches before starting, say to forty-two or forty inches from buckle to buckle, and head stalls and bridles should also be of small size. The picket-rope with headstall is, of course, always required.

The English hunting saddle is very well in this country, where there is something between skin and bone, but for long-continued marching, the secret of avoiding sore backs is to have a *large bearing surface*. This the Turkish saddle provides, and, clumsy though it be, it causes less damage than our hunting saddle.

Our new regulation saddle with fans seems excellent. Two pockets or saddle-bags (one only is regulation) will be found very useful with this saddle. The pockets should be so strapped to the saddle as to be readily taken off. This is often necessary at the end of the day to secure the contents. If it be necessary to carry a pocket on foot, when for instance a horse breaks down, two cloak straps make a shoulder strap. The new wallets are fixed to the saddle without a girth.

A breastplate is useful in a hilly country to keep the saddle from shifting back. It should be small for foreign horses.

Stirrups should be large enough to be used with the largest boots; for instance, even with india-rubber or fur-lined boots. In cold weather this allows of a non-conductor, such as a bit of sheep-skin, being put on the tread and sides.

The numnah is another product of civilization that should be got rid of. The best plan, it is thought, is to have a suitable horse-blanket to fold under the saddle. For riding, the roller (without pad) is passed round saddle and all.[1] The folding of the blanket should be constantly altered, and all caked dust and sweat should be scraped off; when a sore back is feared, the folds can be arranged to take off the pressure. Whatever happens, the horse has his cover, and for Arab horses in cold weather this is even more important than for ours, as they are accustomed to a much heavier and warmer blanket. Horses accustomed to bivouac, if put for a night or two in a close stable, are apt to catch cold when out again in cold weather. An open shed, however, is an advantage. The Turkish shoe is good in snow, as horses *ball* less with it, and it is more easily replaced in the

[1] Capt. Gill, R.E., tells me that when girth-galls give trouble, he found this roller, used like a racing surcingle, answers without the girths and grips in a somewhat different place. A longish roller is required. The Austrian cavalry use a sort of felt blanket, folded in four, that answers well.

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country; it is also a protection on rock. Grease on the soles of the hoofs prevents the snow from balling.

Some form of waterproof saddle-cover is necessary for Officers whose work obliges them to dismount much. In bivouacking, too, it it is important to keep the saddle dry. The new regulation saddle-sheet (4 ft. by 3 ft.) answers the purpose. A nosebag to hold a feed should always be taken on the march. If you are accompanied by a man on a second horse, the man can take it, but if you are likely to part company with him, take it yourself. Heel ropes are very necessary with stallions, and pickets and ropes are required when camping for any time. Instead of carrying heavy wood or iron pickets, if the picket rope have 3 ft. of light chain (with a ring) at each end, then any small bit of wood, or a small faggot, buried in the ground, will do to secure the ends. No horse can draw a picket buried horizontally 8 or 10 inches under ground.

In fly-infested countries, ear-nets for horses are sometimes worth taking.

The pack-saddles in the country often suit the local cattle best. Much depends on girthing the saddle securely, and on dividing the load evenly between the two sides (with as little as may be on top), so as to prevent its shifting. The drivers with pack animals always seem to think that their weight, added to that of the load, helps the animal: this illusion should be discouraged. For a pack-horse, 200 lbs., including pack-saddle, is a very full load. With 160 lbs. a march of 25 miles in a day is an effort; but 20 miles can be kept up for a week. For a long journey 80 lbs., besides the saddle, is enough for small horses. The pace is about $2\frac{1}{2}$ miles, including short halts. When a party starts for a long ride the pack-horses should not be overladen, for, though the food is consumed, some horses are sure to break down, and their loads must be distributed. In buying horses, look out carefully for chronic sore backs and for blindness.

Furniture.

In order to be raised a little above the mud, and as a protection against fever, a light bedstead is a most valuable piece of furniture: and, when troops are stationary, most Officers can manage to have one. White's camp-bedsteads certainly stand very rough usage. The screws should be put in well, or they drop out in hot weather. The Gwenfe hammock, which is independent of all guys, and acts also as a sort of tent, promises to be extremely convenient, and if it prove capable of bearing long-continued rough usage, it might replace the bedstead with advantage.

A hair-mattress is a bulky luxury. If there be transport enough, take a second blanket (not a blanket-bag), which is less bulky and more generally useful than a mattress, and in very cold weather is almost necessary; though by sleeping in all one's clothes, in a blanket-bag with the waterproof cloak over all, one is generally warm enough. Of course the bedstead must often be left behind, and then some much more portable arrangement is required. Cork-mattresses and full-sized air-beds are too bulky to take on one's own horse; and a

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separate waterproof sack to lie in seems unnecessary, as the regimental waterproof cloak acts as a ground sheet. All that can be desired is something on which to rest the head and trunk. An air cushion, of from 38 to 40 inches long by 17 inches wide, is large enough for this; and even if it fail as an air cushion, it still acts as a double sheet under the body. A blanket-bag and a kit-bag should be taken with the cushion, so one's bedding only weighs 9 lbs. At night one gets into the blanket-bag, puts on the waterproof cloak, and lies on the inflated cushion; and when it is wet the feet are thrust, blanket and all, into the soldier's bag. If it be very wet, the boots, when off, can be drawn under the waterproof; the head is covered with the nightcap and the hood of the cloak; the helmet may get wet, it dries again quickly. The holsters, saddle, and pockets are kept dry with the saddle-cover; or when the man (and saddle) find shelter, the saddle-cover gives the horse a little protection in addition to his blanket. In very cold weather a buffalo or opossum skin bag is warmer than a blanket, but is more bulky to carry. All bags should be turned inside out each morning and shaken. Should it happen that the climate is such that waterproof cloaks are not carried, then White's 7 lbs. waterproof sleeping sack might take the place of, or be taken with, the air-pillow, if transport permit. Officers who have to write much want a small table and stool (when they can get them). The *pine* tables by White, with thumbscrews to secure them, are convenient; but if it be decided to have mule baskets, a top, in a single piece, of the size of the lid to strap on outside, would, it is thought, be best. A chain-chair is seldom practicable (White's folding chain-chair seems the best of its kind), but a 2-lb. four-legged stool, to fold into a stick, can generally be managed with the baggage.

Sheet india-rubber basins and baths are the most portable, and answer perfectly; inflated ones are not necessary.

In rapid movements, or in extreme cold, or when water is precious, the use of the tub ceases to be a custom, and becomes a ceremony. It is then enough to carry one tub for several people. A small-sized one is preferable. If need be, one can manage with a basin alone.

A small looking-glass is necessary for those who shave; few do.

If tents be used, a pole-strap, and, with each detached party, a hand-axe, a picket-shovel, and a mallet are wanted. Regimental Officers can depend on the pioneers.

A tarpaulin floor-cloth to a tent is a great benefit when it can be carried. In estimating for carriage of tents, take their weight when wet.

Clothes.

In the list, the supply indicated is intended for a few months, the articles being new to start with. If for a longer time, a reserve in proportion should be taken out. In the same way, according to the season, clothing should be thick or thin. In European Turkey the shade-temperature ranges from 100° to 0° Fahrenheit in the year; and though the days in autumn are very hot, the nights are cold. In summer a thin flannel shirt and thin Indian gauze drawers are enough

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underclothing. In winter, the thickest woollen drawers (two pairs if possible) and vest, with two thick shirts, or a shirt and knitted waistcoat, are just comfortable; and at such times people wear furs, if they have them. A cholera belt should always be worn—a fine flannel bandage that goes twice round the stomach is best.

For exploring parties, or Officers not on military duty, a shooting-coat with many pockets (or Norfolk shirt), waistcoat, and breeches, is the most convenient dress. These would take the place, on the list, of patrol jacket and pantaloons; and a white cashmere handkerchief does duty for the collar of civilization. In all cases, even when in plain clothes, a regimental waterproof cloak with a hood should be carried; a long light overcoat, with hood, takes the place of a regimental one for men not in uniform. A grey felt helmet, with chin-strap, is the best head-dress, except in very cold weather, when a fur cap with ear-flaps (to be down or up) is warmer, and the head can then be covered with the waterproof hood as well.

If in uniform, the regulation helmet would, it is presumed, be worn. Helmets should be tried on with hair cut short as it would be. The chin-strap should be carefully fitted before starting; it is much wanted in wind. In mid-winter, a forage-cap, with a Canada-pattern fur cover, might be more convenient; at other times a forage-cap does not seem necessary, as the helmet must be carried, and, off duty, the red nightcap can be worn in bivouac.

For duties where much walking is combined with riding, shooting boots and leather gaiters are most convenient, as it is more fatiguing to walk in long boots. The best shooting boots are made with the thickest possible solid *single* soles. These are less stiff than, and last as long as, the heavy soles often used. Nails do not save the soles, and it is better to be without them when riding. The so-called porpoise hide laces are well worth the extra expense. The regulation boot is the best for riding only, except in wet weather, when the drip from the waterproof wets the feet. India-rubber boots are then the most comfortable; they are unfit for much walking, and are slippery in snow, but are a great protection in mud and slush. The best arrangement, perhaps, but one, as yet untried, would be to have a pair of short black waterproof gaiters, ankle high, to cover the whole of the feet down to the soles, with a leather strap under each sole near the toe to keep the gaiters in place; the gaiters would be fastened behind with two straps, one above and one below the spur; they would keep off the drip from the waterproof, and could be at once taken off for walking; they would occupy no space when carried on horseback, and are quite as suitable for shooting-boots as for the others. Boots, if well greased or dressed, will for a time turn water, but not entirely. All boots for riding should be large enough to take two or three pairs of thick stockings or socks. Riding boots should be easy enough to be got on and off without boothooks and bootjacks. A spare pair of boots is by no means a necessity for several days, even in wet weather. Thin canvas boot-bags are convenient for boots carried in luggage. For marching, grease (or soap) rubbed on the feet and on the insides of socks prevents blisters. Always try to change socks at

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the end of the day. New socks last longer if darned at the heels and toes.

In wet weather the regimental waterproof cloak is the most valuable article of dress. For a mounted man it cannot be too long; and it should be strengthened at the fork and at the junction of the cape and coat with leather splices. In the latter case, this makes the hook secure. A thin strip of leather round the lower edge of the cloak prevents its fraying. The cloak should have a removable waterproof hood. In severe weather the people of most countries always protect their heads with something more than a cap, particularly when sleeping out, and this the hood does perfectly. With the cloak and with waterproof boots, one can do without a change of clothes for a week or more, even in wet weather.

The regimental great coat is less useful than the waterproof, and is generally assigned to the baggage. In winter, one is glad sometimes to wear it, with the waterproof as well. If the coat be worn without the waterproof, a removable cloth hood is an advantage; but of the two the waterproof hood is the more generally useful. The coat is a serious addition to the weight dismounted Officers have to carry; it should have buttons on the collar for the cloth hood.

The patrol jacket, whether blue or red, should be large enough to allow of two or three shirts being worn underneath. It should have small outside breast pockets on each side, for a watch and pencil. The chains for these pass through holes in the bottoms of the pockets, and are secured to rings inside the coat. With such pockets the articles can be taken out without opening the coat, a great convenience when mounted. All the pockets should be lined with leather, and the side pockets should be large enough for the notebook. If a regimental waistcoat be taken it should have red serge sleeves; then, except in very cold weather, it acts as a mess dress.

Pantaloons for winter should be loose enough for winter underclothing. Dismounted Officers would have trousers instead. Trousers converted to breeches are much more comfortable with gaiters than trousers are. Each brace button should have a duplicate sewn on beside it. If buttons carry away, people don't sew on new ones, but go without. Roomy fob pockets in the pantaloons or trousers, large enough to put one's hand in, are convenient for purse and keys. Black doeskin is the best material for strapping pantaloons.

All pockets should have buttons to close them; as, otherwise, when sleeping in one's clothes, things constantly fall out.

In extreme cold there is nothing like fur. By having patrol jackets and great coats made very large, fur linings can be put into them in the country. Wolf skins are common, and are said to discourage insects. Sheepskin stockings (wool inside) can be used inside the large india-rubber boots, and are a great protection from the cold; they may be long enough to come over the knee. Similar stockings of blanket to go over riding boots are also much used in cold countries.

A cummerbund or silk sash wound tight round the waist is a support in riding (though with a cholera belt is not a necessity, and has certain disadvantages); it also saves the drag of the sword belt

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on the stomach. This, too, is lessened by using a sword sling under the coat. A soft leather or broad web sword belt (but with regulation slings) is most comfortable, and, except with a tunic, should be worn if it be permitted. In the Sam Brown belt, much used in India, the sling is of leather, and is worn outside.

The face net used in Ashantee, which can be worn with or without the helmet, would sometimes be a convenience. Though mosquitos are not excessively troublesome, flies are; and in the neighbourhood of carrion are sometimes fatally poisonous. If you have nothing else, a piece of muslin, 3 feet × 4 feet, to lie under is a great protection to the face and hands. Mosquito netting is a slight protection from malaria.

Soldiers must get on with the insects they meet, but explorers may sometimes indulge themselves in the luxury of insect powder.[1]

A pair of slippers of red canvas, with india-rubber sides and soles, is a portable luxury. They rest the feet, and, even in wet mud, keep them dry; by having them, boots can be spared to be dried.

When stationary with one's luggage, the best plan before dining is to dress for bed. That is, put on the other flannel shirt and drawers and a pair of light flannel trousers. Some prefer pyjamas with feet, as being more puzzling to insect life; trousers or drawers should be tied round the ankles, and socks should be worn when sleeping. It is much safer to be too hot than too cold. In hot weather the blanket is only put over the feet and is pulled up when the morning chill comes.

Woollen underclothing should be shaken and aired constantly.

Except when sleeping in a house, all clothing should be put into the luggage each night, to keep it from getting wet with the dew.

Cooking Utensils.

20 lbs. of utensils are supposed to be carried with the baggage for each Officers' mess of three. When they do come up it is important, in campaigning, to be able to cook quickly, and the fundamentals for cooking are—first, a kettle (White's are excellent, being flat, and suitable for wood embers); second, a frying pan.

A tin stewpan is also a convenience where vegetables are found, or rice is to be boiled. The canteen case of galvanized sheet iron serves to boil water for washing, &c. Copper cooking vessels are dangerous. Enamelled plates and cups are very nice, but the cups do not pack well, and when weight is important it is best to have two or three tin cups (with wire handles) which fit one within the other, and to have tin plates as well. Every man is sure to have two or three friends to eat and drink with him pretty often, and they do not travel about with their plates, as a rule.

Hence though, if need be, one can eat with one's fingers and drink out of the palm of one's hand, still, when it is not necessary, much

[1] Pyrethrum Roseum (Savory and Moore), in a sort of pepperpot, answers well. People sometimes put each foot of their bedstead on a piece of paper and put a ring of the powder round the foot; saving the powder each morning. Flies may be driven out of a tent by firing a little gunpowder in it.

comfort is lost without cause, if one is stinted in those matters. So for each man 2 knives, 2 forks, and 4 spoons are desirable. Each canteen should have an eggcup per man, also a salt and pepperbox for the party, and a regular tin-opener (Lund's is the best), and a corkscrew for the servants' use. For frying eggs or meat the cook requires some lard or butter.

Could one be always sure of the canteen, and of firewood, nothing more would be wanted. But to provide for accidents, or the absence of fuel, an Etna is desirable, and should be carried with oneself. The one proposed, boils ½ a pint of water in five minutes, with 1½ dessert spoonsful of spirit of wine, or ¾ of a pint in seven minutes with a little more. The spirit bottle holds about 27 dessert spoonsful. The cap of the burner should be marked as a measure. Whenever firewood is available, it should be used to save the spirit. A newspaper, judiciously used, boils water in the Etna.

Food.

For small parties moving through the country in peace time, meat or eggs can almost always be found; and with troops the bulk of the food will be provided by the commissariat. At the same time, the things put down, being more portable and more quickly used than ordinary rations, are well worth the carriage as a provision against accidents; though, as far as possible, one should live on what one can find, or on the Service rations. It may be laid down as a safe rule *never to mount a horse or to start for a march without having some food with you as well as inside you.* Most of the extracts of meat are unsatisfactory; one wants something more than to be kept alive. Brand's or Kopf's extract, it is quite true, if added, say, to consolidated pea soup, carries one a long way.

One great difficulty is the want of vegetables;[1] pea soup and rice are, in a measure, substitutes.[2]

Ship's biscuit is the best form of farinaceous food, and detached parties should carry all they can of it. Turkish biscuit requires to be soaked, and then heated on the fire to dry it a little; or it may be pounded. Much of the illness of foreigners is due to the bad bread of the country districts.

In warm weather, tea is generally the most agreeable. Tea is now sold, compressed to one-third its original bulk, in ¼-lb. cakes, which keep for a very long time. This form is the most portable. Kopf also makes compressed tea, with sugar and milk, in 3-oz. tin cubes, which are very convenient. Tea should stand in boiling water for eight minutes; for early marching the liquor may be separated from the leaves at night and quickly warmed in the morning. Cocoa and milk is the most warming, but one tires of it. On the whole, coffee and milk is perhaps the best. Half-pound tins (those of the Anglo-Swiss

[1] Kopf's consolidated Scotch broth is an excellent preparation, as it contains a large proportion of vegetables.—Ed.

[2] Rice one gets in the East requires to be sifted and then washed two or three times before use; it should be soaked for two or three hours and then boiled quickly; then the water strained off and the rice dried by evaporation.

Company are best) should be taken for marching, and a dry spoon should be used to take out what is wanted; otherwise the paste liquefies. Among the luxuries marmalade is the most prized, because it is healthful as well, and seems to check scurvy. Crosse and Blackwell's tinned marmalade and jams are excellent.[1] Brandy (or spirits) should be looked on as a medicine, and should only be used as such: otherwise, it is not a necessity in any way. Country wine is best "mulled."

Soldiers may consider themselves fortunate if they can get some of the above forms of food to make up for deficiencies. There are, however, many others that are suitable. For instance, good Menier chocolate in sticks or slabs is very portable and sustaining. Meat lozenges are also very portable when riding or marching. Sardines in boxes are also convenient, and may, with advantage, be grilled for a change. When one has diarrhœa, Liebig's extract (½ a teaspoonful to a soup-plate) with rice makes a good and suitable soup. Whitehead's soup-squares are also very portable, and make excellent soup.

Fowls can be plucked quickly if dipped into boiling water.

Tinned vegetables, such as peas, tinned condensed milk (that of the Anglo-Swiss Condensed Milk Company is said to be by far the best), tinned butter, tinned oatmeal, and German sausages are among the luxuries one does well to get when they can be obtained at hand. Potted ham and bloater-paste are things to be desired. Coffee made in the Turkish way is a strong stimulant. The coffee is boiled in a little pot of water till a creamy froth comes on the top, then a few drops of cold water are poured in to settle it, and sugar is added in the pot.

Grape skins, being indigestible, stave off hunger; so does "smoking." Where the tobacco is only fit for cigarettes, a supply of papers should be taken.

It is best to filter all "unknown" water. The pocket-filter, with a double length of tube (the longer the better) as a syphon, can be used conveniently in a bucket. The metal-covered filters of the Silicated Carbon Company are smaller, cleaner, and stronger than the plain carbon blocks. An exploring party with ample transport should also take one of their Army medical filters (7 in. × 7 in.), weighing 9 lbs.

The small filters should be constantly washed, boiled, and baked, or they become useless. With very dirty water, the filter may be used in a pocket handkerchief or bit of canvas.

Where troops have been engaged, search the streams for dead animals, and the wells for corpses. At Sedan in 1870, and at Karahassan Keue in 1877, wells were thus polluted and used in ignorance.

Leather or canvas water pack-bags require aprons to protect the animal from the wet.

Books, Stationery, and Instruments.

A Prayer-Book may be wanted to read the Burial Service.

The army field post would provide post-cards, and should supply

[1] Major C. J. East, A.Q.M.G., points out to me that the food tins in the French Army are each furnished with a wire loop so that they can be strapped on to the kit. This addition can easily be made at home.

franked envelopes, to avoid troubling every one with carrying them. At need, a sheet off the pad can be sealed up as a letter.

The map (generally calico) should be ruled in squares, each side a mile, or some sub-multiple of a mile (unless the scale be very small). The lines should be magnetically N. and E., so that, with a compass and a protractor, places that can be seen may be identified.

Graphine, in sheets, is the most portable form of ink—a small piece put into water makes enough to fill a bottle.

A sketching case should have a thoroughly efficient waterproof cover. Tough bank-post paper with blue lines should be taken for sketching. Large notebooks 8 inches by 4½ inches are convenient in wet weather.

Scale (logarithm) paper is invaluable for Officers who have to make sketches of details. Notebooks should be made of this paper.

The shading of ground is much more quickly and easily done with a pencil and stump than in any other way.

The compass should have a small socket that will screw to it. This allows of its being stuck on the top of a stick, so as to be steady. Any rough stick can be cut and used in this way. Elliott, in the Strand, makes these sockets.

A sextant is occasionally useful, as on ship-board, where a compass is thrown out.

Officers, particularly when detached, require to keep copies of reports in order to refer to them again. Van Anden's roller copying-press is the most portable. Copying books (foolscap size) are required as well.

Military attachés and explorers do well to take meteorological observations daily. Casella makes admirable maxima and minima pocket thermometers in ebonite cases for the purpose.

Medicines, &c.

In addition to the graver ailments—such as typhus, typhoid, cholera, and acute dysentery—diarrhœa, dysentery, and low fevers are common. When a doctor is at hand, consult him, but in his absence, should bad diarrhœa begin, avoid meat and bread; use only milk or filtered water; take rice and rice water, and keep warm. A dose of rhubarb sometimes cures it; a good dose of chlorodyne is also an efficient temporary remedy when on the move. Collis Browne's chlorodyne is said to be the best. The doses mentioned on the instructions may be exceeded by a quarter with safety.

English doctors in Turkey found that, at the beginning of dysentery, a dose of castor oil often effected a cure. Ipecacuanha is also useful.

Good quinine (sulphate) becomes scarce in a big war, so a small supply is perhaps worth taking. Learn to judge what, say, 5 grains look like on your hand, and eat them up out of your hand, taking some water to wash the quinine down.

Officers, when likely to be engaged, should take a piece of lint with the calico bandage. A litter can be made with two muskets and a great

coat. The barrels are put into the sleeves, and the skirts may be fastened round the stocks with strong safety pins.

Silk pocket handkerchiefs should be large enough to act as slings for wounded arms.

In the absence of a doctor it is worth while to carry some of each of the remedies marked A and B. Carbolic oil (the acid and olive oil being as 1 to 10) is useful for dressing horses' sore backs, heels, &c.[1] Paraffin ointment is also said to be useful.

Sundries.

A second watch is most useful. Even if the first do not break down, it is often necessary to lend one to servants, &c. The "best" watch, at all events, should have a seconds hand. A repeater is very convenient at night, as it saves striking a light. The same key should do for both watches. A detached party, particularly with native servants, would find a small alarum very useful. The difficulty of starting in time is a daily irritation.

The engineer signalling telescope is an excellent one. In very damp weather it sometimes draws out badly; a little grease prevents this. The caps require a small connecting strap to prevent their pulling off. The best field-glasses are not nearly as efficient, though useful to catch objects.

The soldier's wooden water-bottle, fitted with light leather straps, is about the best there can be: it keeps water cooler than the ebonite bottle. It also forms the best store bottle for brandy in one's baggage. A soft wood plug should be pushed from the inside into the metal mouthpiece, as the ordinary plug is apt to be knocked out when carried in the luggage.

Chesterman's steel metre and yard measure answers for all purposes. It measures the girth of trees, the calibre of guns, &c., and with it a sounding or measuring rod or string can be marked for use. Officers do not want tapes: "pacing" is good enough for war.

A pocket-lamp is frequently required. The twilight is so short in many countries one is constantly caught, and it is often necessary to dismount and hold a light to the ground to find the track. One should be able also to write and read an order on the march. It is best to take regular lamp candles, as they burn longer than others. They should be economised by burning common candles (they can often be got) except out of doors. In camp the lamp candle-holder acts as a separate candlestick. The cylindrical railway lamp, with revolving outer body, is the best, but it wants a cap with a grating for use in the open air. Salsbury makes these.

Brass dish candlesticks that screw together are the most portable. Only the scribes want them.

The knife should have a strong horse-picker, a leather punch, a tin-opener, screw-driver, corkscrew, and small tweezers, and, if gaiters are to be worn, a button hook. The big blade should have a spring stop, a saw blade is a delusion.

[1] The Spanish muleteers believe in a still readier (saline) application for this purpose.

Thick Turkish towels hold most water, and in damp weather can be used undried much longer than others.

Modes of Carrying Equipment A.

For a mounted Officer, and particularly a Staff Officer, it is important that, whatever breaks down, he may be able to go on, as long as he and his horse stick together. The following arrangement is therefore suggested, and bearing in mind that the wallets may remain on the saddle, it is best to put the many small articles into the saddle pockets. Flasks particularly, and occasionally revolvers, have an unaccountable way of getting emptied if out of one's sight. They should be looked to each morning, and so should the water bottle:—

(*Mounted List.*) *Total* 36½ *lbs.*

In saddle cover as valise (9 lbs.).	In two saddle pockets (11½ lbs.).		In or over wallets (14½ lbs.).	In clothes pockets (1 lb.).
Kit-bag.	Etna complete.	Food.	Waterpf. cloak.	Dictionary?
Air-cushion.	Spoon and fork.	Knife (clasp).	Revolver.	Notebook.
Blanket-bag.	Cup.	Comb.	Water-bottle.	Penholder.
1 pair canvas shoes?	Sponge & bag.	Toothbrush.	Food.	Compasses?
1 Basin?	Protractor.	Medicines (A)	Telescope.	Map.
	String (30 ft.).	Writing pad.	Lamp.	Watch.
	Towel.	Calico bandage.	Compass.	Seal and wax.
	Shirt?	Filter?	Pocket-flask.	Pencil.
	Diary?	Pair drawers?	Pair of socks.	Measure.
	Ink bottle.	2 spare candles?	Nightcap.	Keys.
	Soap.			Ink, papers.
				Purse.

The food is that marked A in the general list.

In moving fast it is inconvenient to carry the telescope and compass slung by the straps. A small strap on the compass case to secure it to the belt is most convenient when in uniform. In plain clothes an outside breast-pocket is the best place for the compass case. Officers accompanied by mounted servants can get some of the above carried by them, and also some extra articles such as a bath and a bucket. At a pinch one can tub with the basin or the horse can drink out of it if necessary.

The waterproof cloak is rolled and strapped over the wallets.

If it be likely the revolver will be wanted, it should be strapped in its cover outside the cloak with the near cloak strap. It is then at hand.

The water bottle or telescope may be similarly attached.

In cold weather the regimental coat would be worn.

The blanket (in a roll about 21 inches long) and cushion should be put, at starting, into the kit-bag inside the saddle-cover.

Mounted Officers are comparatively well off; a much more numerous, and therefore more important body, the leaders of the infantry,

LIST OF NECESSARIES AND LUXURIES FO

Those marked **A** to accompany the Officer always. Those marked **B** to do so when convenient. Those mark

Luggage and Furniture

No. and Description.	How carried.	Approx. weight. lbs.	oz	Approx. cost. £	s.	d
Soldier's kit bag	A	1	9	0	4	9
Bedstead bag ..... ?	B (1)	2	0	0	15	0
Mule basket, 24 in. by 11 in. by 15 in. deep inside	B (2)	16	0	2	5	0
or						
Bed bag..	B (1)	12	0	2	15	0
Furniture.						
1 Air cushion	A	3	0	1	5	0
1 Blanket bag	A	4	8	1	5	0
1 Bath and case	A or B	2	8	0	17	0
1 India-rubber basin	A or B	0	12	0	5	6
1 4-legged stool (Field's)	B (2)	2	0	0	7	6
1 Table complete ... .?	B or C (1	6	0	0	14	0
1 Pole strap ....?	B	0	10	0	2	9
1 Looking glass . . ....?	B (1)	0	8	0	0	6
1 Sword cover, leather ?	B or C	0	8			
1 Spare blanket .....?	B	4	8	0	8	6
1 Folding chair chair...?	C (1)	5	0	0	15	6
1 Ground sheet .....?	?	3	7	0	15	0
1 Bedstead.....?	B or C	14	0	1	10	0
Gwynfe hammock .....?	B or C (15)	12	0	2	10	0
Tent for ditto .....?	B or C	5	0	0	10	0
Regulation bed valise...?	B or C	9	0	1	6	0
		Totals. lbs	oz.			
In addition to luggage {	A	9	1			
	B	11	4			
	C	0	0			
	?	36	9			

Clothes.

No. and Description.	How carried.	Approx. weight. lbs.	oz.	Approx. cost. £	s.	d
Regulation waterproof cloak and hood	A	3	12	2	8	6
1 Pair riding boots..	A	4	0	1	16	0
1 Pair india-rubber ,, ...	B	5	0	1	8	0
1 Pair shooting boots ..	C	3	2	1	7	6
4 Spare laces ....?	A & B	0	1	0	2	0
1 Woollen night cap.. ..	A	0	2	0	1	10
1 Pair leather gaiters ?	A B or C	1	0	0	6	3
3 Flannel shirts	1 of each A rest B	2	4	1	10	0
3 Pairs drawers		1	4	0	16	6
3 Silk handkerchiefs...		0	3	0	9	0
3 Pairs of wrstd. socks		1	4	0	11	0
2 Pairs stockings	B or C	1	2	0	8	0
2 Cholera belts	A & B	0	10	0	9	0
1 Face net bag ..... ?	A or B	0	0			
1 Spare pair braces	B	0	2	0	3	6
1 Pair sleeping trousers	B	1	0	0	8	9
1 Pair canvas shoes	A (6)	1	0	0	2	6
1 Fur cap..... .....?	B or C	0	6			
1 Cashmere neck handkerchief.....?	A	0	3	0	2	10
2 Pair woollen drawers ?	A	2	0	0	14	0
2 do. vests ...?	A	1	8	0	13	0
Uniform.						
1 Helmet	A					?
1 Forage cap	A or C					?
1 Sword	A	3	8			
1 Sword sling	A	0	1	0	3	0
1 Sword belt	A					?
1 Cross belt.....	A or C					?
2 Patrol jackets	A & B	6	0	9	0	0
2 Pair pantaloons	A & B	3	0			
1 Cloth great coat.... ...	A or C }	7	8	5	5	0
1 ,, cape. .....?	A or C }					
3 Pairs white woollen gloves.	A & B	0	9	0	6	0
1 Pair bearskin gloves ?	A or C	0	6	0	5	0
1 Tunic.....?	A or C	3	2			
Evening dress clothes, &c., for travellers ..?						
		Totals. lbs.	oz.			
Ex. Waterproof	A	4	5			
	B	16	2			
	C	1	6			
	?	11	0			

Cooking Materials and Food.

No. and Description.	How carried.	Approx. weight. lbs.	oz.	Approx. cost. £	s.	d.
1 Etna, consisting of—						
1 Tin and lid						
1 Burner and stand ..	A					
1 ½-pint spirit bottle ..						
1 Match box	(1)	2	6	0	4	0
1 Strainer (net)						
1 Strap						
1 Spoon and fork	A	0	2	0	3	0
2 Pint tins of spirit	B & C (1)	2	0	0	6	0
1 Canteen case, containing—				2	0	0
1 Tin kettle.....						
1 Frying pan						
1 Wire gridiron						
1 Crk. screw (Shafer's)				(0	1	3)
1 Salt and pepper box	B for 3	15	0	0	1	9)
1 Tin opener (Lund's)						
1 Small meat knife ...						
1 Cook's iron fork and spoon						
1 Small soup ladle.. .						
2 Plates						
2 Tin cups						
2 Spoons						
2 Small spoons	B	2	0			
2 Knives						
2 Forks						
1 Egg cup						
Food.						
Compressed tea	A (13)	0	2			
,, ...	B	0	8			
,, or	C	2	0	0	6	0
Tea, milk and sugar in 3 oz. tins	A (7)	0	3			
	B	1	2			
Coffee and milk in ¼-lb. tins	A	0	8	0	0	6
,, ,,	B	3	0	0	3	0
	C	4	0	0	4	0
Cocoa and milk ,,	B	1	8	0	1	6
,, ,, ...	C	4	8	0	4	6
Cooked corned beef in 2-lb. tins	A	0	8	0	0	7
	B	4	0	0	2	8
	C	6	0	0	4	0
Brand's "extract of meat	A	0	1	0	2	3
	B	0	4			
Consolidated pea soup	A	0	3	0	0	1½
,, '	B (7)	2	0	0	1	6
,, ,,	C	2	0	0	1	6
Ship's biscuit	A	1	0	0	9	0
,, ,, ...	B	?				
Salt, pepper, and sugar	A	0	2			
" " "	B	?				
		Totals. lbs	oz.			
Inc. 2 lbs. 11 oz. of food	A	5	4			
Inc. 12 lbs. 6 oz. of food and 7 lbs. for canteen	B	20	8			
Inc. 18 lbs. 8 oz. of food.	C	19	11			
	?	0	0			

Stationery and Med

No. and Description.	How carrie
1 Purse.....	A
1 Pocket dictionary	A (5
1 Protractor	A
1 Penholder	B
1 Note book 5¼ in. by 3½	A
2 ,, ,, ...	B
1 Pocket diary	A
1 Map of country	A
1 Small writing pad	A
Seal and wax	A
1 Ransome's ink bottle...	A
1 Packet ink papers	A & B(1
1 Soldier's pocket book	B
Writing and blot. paper ?	B
Envelopes and pens ...?	B
Extra for Staff and R E.	
1 Pair folding compasses	A
Sketching case and cover, or sabretache...	A or
1 Aneroid (3 in.)	A
Ruled post paper	A
India-rubber pencil	A
Coloured & common ,,	A
Shading stump [large]...	A
2½ Inch colour box, 1½ oz.	B
Scale paper	B
1 Tin desk filled, and canvas cover..... ...	B or C
Abney level..... ...	A or C
Sextant..... ?	B
1 Roller copying press ...	B 9)
1 Bottle copying ink ...?	B
Copying books	B
Paper, &c.	B
Medicine.	
8 5-grs. silvered pills of quinine	A
Half-oz. bottle of sulphate of quinine	B
2 Small bottles of chlorodyne	A & B
1 Tin mustard leaves ...	A or B
1 Small bottle of rhubarb	A or B
Sticking plaster, lint, bandage, needles & thread, safety pins ...	A
20 5-grs. pills of ipecacuanha	A & B
Insect powder., ... ?	A
Carbolic oil or paraffin ointment ..... ?	A & B
Snake medicine.	
Exclusive of those for Staff and R.E. {	A
	B
	C
	?

URIES FOR CAMPAIGNING AND EXPLORING.

. Those marked **C** as a reserve or when in a standing camp near the base. Those marked ? are exceptional.

TIONERY AND MEDICINES, &c.				SUNDRIES.				HORSE APPOINTMENTS.				REMARKS.
scription.	How carried.	Approx. weight.	Approx. cost.	No. and Description.	How carried.	Approx. weight.	Approx. cost.	No. and Description.	How carried	Approx weight.	Approx. cost.	
		lbs. oz.	£ s. d.			lbs. oz.	£ s. d.			lbs. oz.	£ s. d.	
.....	A			2 Watches and keys	A	0 12		1 Pair reg. spurs	A	0 12	0 10 0	Almost everything in this list can be procured from the Army and Navy Stores, 117, Victoria Street, where arrangements are being made to keep a sample set. A few additional references are given.
onary ..	A (5)	0 3¾		2 Spare do. keys	A			2 Spare straps for ditto	A	0 1	0 0 6	
.....	A	0 1	0 2 6	1 Telescope	A	2 0	2 5 0	1 Regulation saddle, with thong, girth, stirrups & shoe case	A			
.....	B	0 0½	0 0 6	1 Prismatic compass.....	A	0 9	2 4 0					
½ in. by 3¼	A	0 4	0 1 0	1 Water bottle 1½ pints, with straps [filled] ...	A (14)	2 10	0 3 6	2 Wallets	A	17 8	5 16 6	
.....	B	0 8	0 2 0					2 Pockets	A	2 0	1 12 6	(1.) White, Aldershot, where also samples can be seen.
y	A	0 8	0 1 0	1 Pocket flask ,, ...	A	0 8	0 4 6	3 Cloak straps	A	2 0	1 12 6	
ntry	A	0 2		1 Steel yard measure ...	A	0 1	0 2 0	3 Valise straps	A	0 8	0 3 0	(2.) Allen, the Strand.
g pad	A	0 2	0 0 6	1 Pocket lamp	A (3)	0 10	0 7 0	1 Saddle cover	A	1 0	0 3 6	(3.) Salsbury, 126, Long Acre.
	A	0 2		1 Collapsing cup	A	0 4	0 3 6	1 Spare shoe and nails ...	A	2 0	0 5 6	(4.) Scott, 42, Bedford Street.
nk bottle...	A	0 4	0 4 0	1 Comb in case	A	0 1	0 0 9	1 Double bridle and bits	A	1 4		(5.) Intelligence Branch, War Office.
papers	A & B(10)	0 1	0 0 6	1 Havresack, linen	A	0 9	0 0 9	1 Headstall and halter ...	A	5 0	1 2 0	(6.) The North British Rubber Company, 4, Cannon Street.
ocket book	B	1 0	0 3 5	1 ,, mail cloth?	A	1 2	0 8 6	1 Reg. nosebag	A	2 4	0 7 3	
lot. paper ?	B	1 8		1 Knife (clasp)	A	0 8		1 Horse blanket	A	1 3	0 5 6	(7.) Kopf & Co., 6, Adam Street, Adelphi.
d pens ... ?	B	0 8		1 Revolver and case	A	2 0	2 0 0	1 Roller	A	7 0	0 13 6	(8.) Barron & Wilson, Strand.
				Cartridges for do. (0·455 inch)	A & B	0 8		1 Reg. packsaddle complete with surcingle and tarpaulin		1 0	0 4 6	(9.) Mordan, 72, Cheapside, E.C.
s STAFF R.E.				1 Small towel	A	0 10						(10.) Marcus Ward's Graphine.
				1 Piece soap	A	0 1						(11.) Lund, 24, Fleet Street, E.C.
compasses	A	0 1	0 13 6	1 Tooth brush and cap...	A	0 2	0 0 3	1 Headstall and halter	A or B	57 0	4 15 0	(12.) Silicated Carbon Filter Co., Church Road, Battersea.
case and abretache	A or B			1 Pair boot hooks ..... ?	A	0 4	0 1 10	1 Blanket.....				
in)	A	0 10		1 Pocket filter (12 2 in by 1¾in.. . ..	A or B	0 8	0 5 0	1 Nosebag				(13.) Goundry, 181, Upper Thames Street.
aper	A			Spare tube & plug for do.	A	0 0½	0 0 4	1 Spare shoe and nails				(14.) Ascher, 28, Maiden Lane.
pencil . ..	A		0 0 6	2 Towels	B	2 8		1 Spare halter.....	B	0 8	0 1 5	(15.) Silver, 66, Cornhill.
ommon ,,	A			1 Pair candlesticks 3in. ?	B (8)	0 *6	0 2 6	2 Roller bandages	B	0 8	0 2 3	
p [large] .	A	10 0		2 Spare cloak straps	B	0 3	0 1 4	1 Curry comb (for 3) ...	B	0 8	0 0 7	
r box, 1½ oz.	B			1 Large tin of wax matches.....	B	0 4	0 1 0	2 Brushes (for 3)	B	1 8	0 8 0	
	B		0 7 0					1 Spare fore shoe	B	1 4		
filled, and ver.....	B or C		1 15 0	1 Ball of string	B	0 2	0 0 4	1 ,, hind	B	1 4		
	A or C	0 9	1 13 0	4 Small gimlets for pegs	B	0 4	0 1 0	Spare nails	B	0 2		
..... ?	B	1 0	3 15 0	1 Housewife complete ...	B	0 4	0 5 6	1 Pair hunting spurs... ?	B	0 8	0 12 6	
ing press ...	B (9)	1 0	0 8 0	1 Holdall, with scissors, hair, tooth, clothes, and nail brushes, and soap box	A or B	1 2	0 8 6	FOR CAMP.				
ng ink ... ?	B	0 5	0 3 0					1 Canvas bucket	A or B	1 0	0 2 0	
s	B	0 2	0 1 0					1 Picket shovel ..... ?	(1)	2 8	2 2 6	Steel articles, such as scabbards, spurs, chains, &c., can be plated with nickel at small cost at the A. & N Stores: this prevents rust.
	B	?	?	Case for 2 candles	A or B	0 2	0 0 4	1 Hand axe ..... ?		2 0	0 2 6	
				1 Small sponge and bag	A	0 6	0 1 10	1 Shoeing hammer .. ?		1 0		
INE.				4 Spare tooth brushes ...	B	0 3	0 1 8	1 Picket rope ..... ?		8 8	0 2 6	
red pills of	A		0 2 0	2 ,, nail brushes.....	B & C	0 2	0 1 0	1 Heel rope		1 10		
				3 Shoe brushes (for 3) ...	B	1 8	0 3 9	2 Canvas water bags for carrying water on a horse; each for 8 gallons (per party) .... ?	B or C			Where articles are marked to two letters with "or," their weight is assigned to the second letter.
dle of sul- uinine	B		0 7 6	1 Water bottle for reserve of brandy	B	2 10	0 1 2					
es of chlo-				Soap	B & C	1 8	0 0 9					
	A & B		0 1 7	Lamp candles, 12 to a lb., in a tin	B	2 0	0 2 0					
d leaves ...	A or B	1 8	0 1 1		C	3 0	0 3 0					
of rhubarb	A or B		0 0 7	Useful papers	A, B, C	1 8	0 0 8	1 Mallet.. ..... ?		1 0		The totals given below do not include clothes actually worn (though the numbers in the lists include those worn), nor arms, telescope, compass, and watch, which are also worn.
ster, lint, needles &				6 India-rubber bands ...	B	0 2	0 0 3	1 File ..... ?		0 2		
fety pins ...	A		?	6 Split steel rings	B		0 0 2					
pills of ha	A & B		0 0 8	4 Tins of dubbing	B & C	0 8	0 1 2					
				1 Spare lamp glass	B	0 2	0 0 6					
				Prayer book	A							
r... ..... ?	A	0 4	0 0 9	Passports..... ?	A							
or paraffin ..... ?	A & B	0 6		Pocket alarum ... . ?	B or C	0 4	1 0 0					
ne.				Tobacco	A & B							
		Totals. lbs. oz.				Totals. lbs. oz.				Totals. lbs. oz.		GENERAL TOTAL = 191lbs. exc. of horse appts.
those for R.E.	A	2 2			A	6 6		All for horse ... (	A	44 0		A = 71 lbs. (Including 44 lbs. for horse appts.)
	B	4 15			B	12 10			B	7 6		B = 73 lbs. (Including 13 lbs. of food, 7½ lbs. for horse, and 7 lbs. for canteen.
	C	0 0			C	5 2		Exclusive of pack equipage ...	C	1 10		C = 28 lbs. (Including 18 lbs. 8 oz. of food and 3 lbs. of candles.
	?	0 7			?	2 12			?	20 2		? = 71 lbs. (Including 11 lbs. of camp equipment.)

T. FRASER,

Captain R.E. and Major.
February, 1879.

A.
(About 27 lbs., exclusive of things worn on person.)

Luggage and Furniture.

1 Soldier's kit bag.
1 Air cushion.
1 Blanket bag.

Clothes.

Regulation waterproof, complete, or Regimental great coat, do.
1 Pair boots
1 Woollen nightcap.
1 or 2 Flannel shirts.
1 or 2 Pairs drawers.
1 or 2 Silk handkerchiefs.
2 Pairs socks.
1 Cholera belt.
1 Pair canvas shoes.
1 Helmet.
1 Sword.
1 Sword sling.
1 do. belt.
1 Patrol jacket.
1 Pair pantaloons or trousers.
1 Pair white woollen gloves.

Cooking and Food.

1 Etna, complete.
1 Spoon and fork.
Compressed tea or coffee, and milk.
Preserved meat.
Pea soup.
Biscuit.
Salt, pepper, sugar.
Water bottle, filled.

Stationery.

1 Purse.
1 Pocket dictionary.
1 Protractor.
1 Penholder.
1 Note book.
1 Pocket diary.
1 Map.
1 Writing pad.
1 Seal and wax.
1 Ransome's ink-bottle.

Extra for Staff and R.E.

1 Pair folding compasses.
1 Sketching case and cover, or sabretache.
1 Aneroid
Bank-post paper.
Pencils.
Shading stump.

Medicines.

Quinine.
Chlorodyne.
Sticking plaster.
Lint bandage.
Needles, thread.
Safety pins.
Ipecacuanha.

Sundries.

2 Watches and keys.
2 Spare keys.
1 Telescope.
1 Prismatic compass.
1 Water-bottle.
1 Pocket flask.
1 Steel yard measure.
1 Pocket lamp.
1 Cup.
1 Comb.
1 Sponge and bag.
1 Havresack, linen.
1 Clasp knife.
1 Revolver (and case) loaded.
5 Spare cartridges.
1 Small towel.
1 Piece of soap.
1 Tooth-brush and cap.
1 Case and 2 candles.
Useful papers.
Matches.
Tobacco.

Note.—The numbers in A include clothes worn.

B.
(About 65 lbs., exclusive of lug

Luggage and Furniture.

Mule baskets or bed bags.
1 Four-legged stool.
1 India-rubber basin.
1 Do. bath.
1 Sword cover.

Clothes.

1 Pair boots.
2 or 1 Flannel shirts.
2 or 1 Pair drawers.
2 or 3 Silk handkerchiefs.
3 Pairs socks.
1 Pair stockings.
1 Cholera belt.
1 Spare pair braces.
1 Pair sleeping trousers.
1 Patrol jacket.
1 Pair pantaloons or trousers.
2 Pairs white woollen gloves.

Cooking and Food.

1 Pint tin of spirit.
Canteen, complete (1 for 3).
Compressed tea and tea and milk.
Coffee and milk, or cocoa and milk.
Preserved meat.
Brand's extract.
Pea soup.
Biscuit.
Salt, pepper, sugar.

Stationery.

1 Penholder and pens.
2 Note-books.
1 Packet ink papers.
1 Soldier's pocket-book.

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3 Sh
1 W
Soap
Lam
Usef
India
Split
1 Tin
1 Spa
Toba

RRANGED UNDER THE HEADS **A, B, C,** AND **P.**

B.
exclusive of luggage and extras.)

Extra for Staff and R.E.

Colour box (2½ in.).
Scale paper.
1 Roller copying-press.
1 Bottle copying ink.
Copying books.
Paper, &c.

Medicines.

Quinine.
Chlorodyne.
Mustard leaves.
Rhubarb.
Ipecacuanha.

Sundries.

20 Revolver cartridges.
2 Towels.
2 Spare cloak straps.
1 Tin of matches.
1 Ball string.
4 Small gimlets.
1 Housewife.
1 Holdall.
2 Spare tooth-brushes.
1 Spare nail-brush.
3 Shoe-brushes (for 3).
1 Water-bottle (brandy).
Soap.
Lamp candles.
Useful papers.
India-rubber bands.
Split rings.
1 Tin dubbing.
1 Spare lamp glass.
Tobacco.

C.
(About 28 lbs.)

Clothes.

1 Pair boots.
1 Pair stockings.
1 Forage cap.
2 Pairs socks.

Cooking and Food.

1 Pint tin of spirits of wine.
Compressed tea.
Coffee and milk.
Cocoa and milk.
Cooked corned beef
Brand's extract.
Consolidated pea soup.
Ship's biscuit.
Salt, pepper, and sugar.

Stationery and Medicine.

Extra for Staff and R.E.

Tin desk.

Sundries.

2 Spare tooth-brushes.
1 Do. nail-brush.
Soap.
Lamp candles.
Useful papers.
3 Tins dubbing.

P
(About 60 lbs.)

Furniture.

1 Bedstead bag.
1 Looking-glass.
1 Table.
1 Pole strap.
1 Bedstead, or
1 Valise.
1 Spare blanket.
1 Folding chair.
1 Ground sheet.
1 Bedstead bag.

Clothes.

4 Spare laces.
1 Pair leather gaiters.
1 Face net bag.
1 Pair hunting spurs.
1 Fur cap.
1 Cashmere handkerchief.
2 Pairs woollen drawers.
2 Woollen vests.
1 Cross belt.
1 Pair bearskin gloves.
1 Tunic.

Stationery.

Abney level.
Sextant.
Writing and blotting paper.
Envelopes and pens.

Medicines.

Carbolic oil, or
Paraffin ointment.

Sundries.

1 Havresack (mail cloth) for infantry.
1 Pair boot hooks.
1 Pocket filter.
Spare tube and plug for do.
1 Pair candlesticks.
Passports.
Alarum.

and Camp Equipage, see the General Table.

are much less so, and the arrangement of their kit requires even greater care.

In a battalion the three Officers in each company might arrange equipment A somewhat as follows, viz.:—

(*Dismounted List.*)

In kit-bag. For each (19 lbs.).	In mailcloth and linen havresacks (5 lbs.).		Separately. Each (11¼ lbs.).
	Each (3 lbs. 3 ozs.).	Among 3 (5 lbs.).	
Blanket-bag.	Food.	1 Etna, complete.	Revolver.
Air-cushion.	Pocket flask.	1 Lamp.	Telescope.
Food (reserve).	Knife (clasp).	1 Compass.	Waterproof cloak.
Towel.	Fork.	1 Protractor.	Waterbottle.
Shirt.	Spoon.	1 Writing-pad.	
Pair drawers.	Cup.	1 Chlorodyne.	Dictionary?
Comb & toothbrush.	Nightcap.	1 Tin coffee (½ lb.).	Notebook.
Sponge and bag.	Pair of socks.	2 Pea soup (6 ozs.).	Penholder.
Tin of dubbing.	3 bootlaces.	1 Filter?	Map.
2 spare candles.	Calico bandage.	Ink bottle.	Watch.
Etnas (2 for 3).	Cloak strap.		Pencil.
Pair of canvas shoes.			Measure.
Filter (2 for 3)?			Keys.
Bath (1 for 3).			Seal and wax.
Bucket (1 for 3).			Purse.
Soap and case (1 for 3).			Ink, paper.

Each Officer would thus have to carry 16½ lbs., including food and water, or rolls including sword. A mailcloth havresack with a broad web strap is most convenient.

The baggage in the kit-bag for 27 dismounted Officers would weigh 513 lbs. This could be carried by 3 pack-horses, as the movements of infantry are, of necessity, slow: 4 would, however, be better, 2 to each half battalion. These could accompany the battalion even when the transport for the canteens and for the balance of the baggage could not keep up with the troops. The articles should be put in the blanket-bags, or they may fall out; and the kit-bags should be secured, *necks up*, in case of a ford. Officers would, of course, gladly provide themselves with a pack-horse a-piece, in order to have more comforts, but this would add 27 pack-horses to the large number which it is anticipated must of necessity be used in future to carry ammunition and water, and perhaps intrenching tools.

Owing to the difficulty of feeding so many animals and to the space they would occupy on the march this could not be permitted. The heavier baggage must, therefore, when carried at all, be carried on wheels, which are more economical of transport and of road-space. In moving in clear country as a rule the battalions would march *off* the roads, whenever time pressed, so as to leave the roads free for

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carriages. In such case wheeled battalion transport would have to separate from the men and fall into the general train; while the pack animals would invariably accompany their own battalion. It will be noticed that by this arrangement the 9 canteens for 27 Officers are to come up in the baggage waggons. If on pack-saddles, an additional pack-horse per battalion would be required. Each pack-horse should have a light tarpaulin cover for baggage.

When transport permits, the Officers' bed-valises would come up with the baggage waggons, and can then be used with the air-cushions. The air-cushion also does as pillow and mattress with a camp bedstead, or a hammock.

Travellers should make arrangements with agents for the transmission of their letters. Most people find that weekly newspapers, such as *Public Opinion*, the weekly edition of the *Times*, and the *Pall Mall Budget*, are the best to have sent out. A great mass of daily papers sent out to the army clogs the field posts, and the very transport of them is a difficulty; a few papers go a long way in the busy times of movement; as fuel they are sometimes useful.

Officers or others who may have important duties should never, in personal matters, do for themselves what they can get their servants or others to do equally well for them. They should save all their energies for their own work, and for the same reason should, while taking cheerfully what is unavoidable, avoid all unnecessary exposure and discomfort. Chills, and having to remain long in wet clothes, are the chief causes of illness apart from bad water and food. When in tents or huts, a special precaution should be taken against having to turn out at night.

Officers and others should always look as carefully after their servants' kit as after their own, and should see that they are provided in a way to carry them through the extra exposure they may have to face, both as regards clothes, bedding, and food. They seldom think of this themselves.

A servant wants a waterproof, a watch, and a blanket-bag; a squad bag takes his extra kit.

Gentlemen: My task to-night has not been without pain; because each recollection it brings back, reminds me of the comrade[1] we have buried to-day. One, whose soldier-like spirit and brilliant memory, rich in recollections of the fighting lore of our Army, so often, when we were together, drove discomfort out of mind, and banished weariness from many a weary march.

The CHAIRMAN: I think, gentlemen, before the evening closes we should give our best thanks to Major Fraser for the very interesting and suggestive paper which he has read to us. I have had considerable experience in this matter of baggage, as I turned my particular attention to it before I went on service in the Crimea, and made it a study whilst I was at Scutari preparing for service. I purchased a good Turkish pony and set to work to organize my baggage, and I arrived at something very much like the model you see before you. I had taken out with me one of

[1] The late Colonel Home, R.E.

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Peats' pack-saddles, and I had two bullock trunks of simple construction. I had a camp bedstead very much like Mr. White's camp bedstead; but then there were few made, and it was made of iron instead of wood, consequently it was much heavier than what is now made; it had a very thin mattress to it. At Constantinople I had made a thin table very much like a portfolio that fitted into the top of one of the bullock trunks, and at the top of the other a simple camp stool. The table had a trestle which fitted over the saddle lying on the two bullock trunks. The bed went along the centre. There were two horn-like projections sticking up in front and behind the pack saddle, the bed lying between them. I was allowed a tent, and this tent was folded loose and put into a bag with half the pegs at each end; this bag was put crossways over the two bullock trunks and the bed, with a surcingle over the whole, and my baggage was complete. But to bring it down to the dimensions that could be carried by a pack animal, a pony, required a considerable deal of study; article after article was cast off. I even had to look at a nice pair of socks, and though I regretted them very much they had to go,—down even to so small a thing as that had I to calculate to get the weight down to what was required. I had a small simple camp kettle, that went in one bullock trunk, and I carried a little tea, coffee, sugar, and rice with me, and it altogether, with the tent, came to 220 lbs. My pony was a capital strong grey pony, which I brought to England afterwards. I had that baggage the whole time I was in the Crimea. I took it up to Shumla, and all round the south of the Crimea, on an excursion, when we frequently had to go at a very sharp trot, and it never moved, never broke down, and I never had an accident with it the whole time I was there. Therefore, gentlemen, I think I can speak very favourably of that sort of baggage, but it requires care and organization. I saw the baggage of our division starting the first day we left Varna, and before we got the baggage train under weigh, every young Officer's kit was kicked off all over the place simply from want of care and good organization. Forethought and arrangement is what is wanted more than anything; you should carefully choose your baggage, then organize it completely, and have every article calculated to an ounce before you go on service, and it repays you cent. per cent. in the comfort you derive from it afterwards. There is no subject that requires more study, more care, than that of carrying your baggage when on service, and it adds to your comfort more than anything else. I am sure we must thank Major Fraser for having done his best to add to the means that Officers have of studying the subject, and of making up their minds as to what they are likely to want beforehand.

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